

REMARKS

Claims 1-35 are pending in the application. No amendments to the claims are made by this Response. Claims 1-7, 12-32, 34, and 35 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Kobayashi et al., U.S. Patent No. 5,533,413 (“Kobayashi et al.”) in view of Beaverstock et al., U.S. Patent No. 5,134,574 (“Beaverstock et al.”). Claims 8-11 and 33 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Kobayashi et al. in view of Beaverstock et al. and further in view of Klimasauskas et al., U.S. Patent No. 5,877,954 (“Klimasauskas et al.”). Applicants respectfully traverse the rejections of the claims. Reconsideration in light of the remarks presented below is respectfully requested.

Each of claims 1-35 recites, *inter alia*, a method or system of using a degradation level of a process entity within a process plant that estimates a level of degradation of the process entity at a first time and compares the estimated level of degradation of the process entity at the first time to a predetermined desired level of degradation of the process entity at the first time.

The Office action failed to establish a *prima facie* case of obviousness of the claims based on Kobayashi et al., Beaverstock et al., and Klimasauskas et al., whether taken alone or in combination, because none of these references discloses, teaches, or suggests the claimed combination of elements recited by each of the claims. Particularly, the Office action states that Kobayashi et al. does not teach “comparing the estimated level of the degradation of the process entity at the first time to a predetermined desired level of degradation of the process entity at the first time,” but alleges that Beaverstock et al. teaches this limitation. The Office action further states that it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teaching of Beaverstock et al. with the system of Kobayashi et al. (Office action, p. 3).

Contrary to the statements in the Office action, however, Beaverstock et al. does not disclose, teach, or suggest “comparing [an] estimated level of degradation of the process entity at the first time to a predetermined desired level of degradation of the process entity at the first time,” as recited by each of claims 1-35. Instead, Beaverstock et al. merely describes comparing an instantaneous throughput calculated at a particular instance of time to a predetermined target value. (Beaverstock et al., col. 8, ll. 43-63).

Applicants respectfully submit that the calculated instantaneous throughput described in Beaverstock et al. is not the same as or similar to an estimated level of degradation, as

recited by claims 1-35. Because Beaverstock et al. does not disclose, teach, or suggest comparing an estimated level of degradation with a desired level of degradation (i.e., the limitation found lacking in Kobayashi et al.), it follows that Beaverstock et al. does not provide the missing disclosure, teaching, or suggestion of Kobayashi et al. Moreover, there is no suggestion in either Kobayashi et al. or Beaverstock et al. to combine the teachings of the references to achieve the combination of elements recited by claims 1-35.

Therefore, Kobayashi et al. and Beaverstock et al., taken alone or in combination, fail to disclose, teach, or suggest each and every limitation of claims 1-35. For at least this reason, claims 1-35 are allowable over Kobayashi et al. in view of Beaverstock et al.

With regard to claims 1-25, the Office action states that Kobayashi et al. does not teach “altering the operation of the process entity based on the comparison to drive an estimated level of degradation of the process entity at a second time after the first time to be approximately equal to a predetermined desired level of degradation of the process entity at the second time, wherein the predetermined desired level of degradation of the process entity at the second time is greater than the predetermined desired level of degradation of the process entity at the first time,” but alleges that Beaverstock et al. teaches this limitation. (Office action, p. 3).

Contrary to the statement in the Office action, however, Beaverstock et al. does not teach altering the operation of the process entity based on a comparison of the estimated level of degradation with a desired level of degradation, as recited by claims 1-25. Instead, Beaverstock et al. merely describes adjusting the control means (and hence the process means) toward a target throughput based on a comparison of a calculated throughput with a target throughput. In fact, Beaverstock et al. does not disclose, teach, or suggest altering any means associated with the process based on a comparison of an estimated level of degradation with a desired level of degradation. Therefore, because Beaverstock et al. does not disclose, teach, or suggest altering the operation of the process entity based on a comparison of the estimated level of degradation with a desired level of degradation (i.e., the limitation found lacking in Kobayashi et al.), it follows that Beaverstock et al. does not provide the missing disclosure, teaching, or suggestion of Kobayashi et al. Moreover, there is no suggestion in either Kobayashi et al. or Beaverstock et al. to combine the teachings of the references to achieve the combination of elements recited by claims 1-25.

Therefore, Kobayashi et al. and Beaverstock et al., taken alone or in combination, fail to teach or suggest each and every limitation of claims 1-25. For at least this additional reason, claims 1-25 are allowable over Kobayashi et al. in view of Beaverstock et al.

With regard to claims 26-35, the Office action states that Kobayashi et al. teaches “using a result of the comparison to produce an index defining a utilization of the process entity.” (Office action, p. 5). Contrary to the statement in the Office action, however, neither Kobayashi et al. nor Beaverstock et al. discloses, teaches, or suggests “using a result of the comparison to produce an index defining a utilization of the process entity,” as recited by claims 26-35. As applicants previously stated in the March 24 Response, Kobayashi et al. describes changing the parameters or coefficients of the model based on a comparison of the model output with an actual, measured maintenance result of the equipment so that the difference between the model output and the actual, measured maintenance result information is reduced to zero or a small value. (Kobayashi et al., col. 4, ll. 27-32; col. 7, ll. 54-60; and col. 10, l. 63 to col. 11, l. 6).

Applicants respectfully submit that parameters or coefficients of a model that are changed based on a comparison result (as described in Kobayashi et al.) are not the same as or similar to an index defining a utilization of the process entity that is produced based on the comparison result (as recited by claims 26-35). In fact, nowhere does Kobayashi et al. disclose, teach, or suggest that parameters or coefficients of a model are in any way related to “defining a utilization of the process entity,” as recited by claims 26-35.

Beaverstock et al. fails to supply the missing disclosure, teaching, or suggestion of Kobayashi et al. Moreover, there is no suggestion in either Kobayashi et al. or Beaverstock et al. to combine the teachings of the references to achieve the combination of elements recited by claims 26-35.

Therefore, Kobayashi et al. and Beaverstock et al., taken alone or in combination, fail to disclose, teach, or suggest each and every limitation of claims 26-35. For at least this additional reason, claims 26-35 are allowable over Kobayashi et al. in view of Beaverstock et al.

Lastly, the Office action rejected claims 8-11 and 33 under 35 U.S.C. § 103(a) as allegedly unpatentable over Kobayashi et al. in view of Beaverstock et al. and further in view of Klimasauskas et al. (Office action, p. 7). As discussed above Kobayashi et al. and Beaverstock et al. fail to disclose, teach, or suggest each and every limitation of independent

claims 1 and 26, from which claims 8-11 and claim 33, respectively, depend. Applicants respectfully submit that Klimasauskas et al. does not provide the missing disclosure, teaching, or suggestion of Kobayashi et al. and Beaverstock et al.

Therefore, Kobayashi et al., Beaverstock et al., and Klimasauskas et al., taken alone or in combination fail to disclose, teach, or suggest each and every limitation of claims 8-11 and 33. For at least this additional reason, claims 8-11 and 33 are allowable over Kobayashi et al. in view of Beaverstock et al. and further in view of Klimasauskas et al.

For the foregoing reasons, reconsideration and withdrawal of the rejections of the claims and allowance thereof are respectfully requested. Should the examiner wish to discuss the foregoing or any matter of form, in an effort to advance this application toward allowance, the examiner is urged to telephone the undersigned at the indicated number.

Respectfully submitted,

MARSHALL, GERSTEIN & BORUN LLP

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By: Marla L. Hudson
Marla L. Hudson
Registration No. 43,680
233 South Wacker Drive, Suite 6300
Chicago, Illinois 60606-6357
(312) 474-6300